

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB2005/001235

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 F04B49/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 F04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 456 581 A (JOKELA ET AL) 10 October 1995 (1995-10-10)	1
Y	the whole document -----	2-10
Y	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 09, 13 October 2000 (2000-10-13) & JP 2000 161204 A (CATERPILLAR INC), 13 June 2000 (2000-06-13) abstract -----	2-10
A	EP 1 319 836 A (CATERPILLAR INC) 18 June 2003 (2003-06-18) claim 1 -----	1
A	US 5 564 905 A (MANRING ET AL) 15 October 1996 (1996-10-15) column 1, line 58 - column 2, line 6 -----	1 ----

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
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- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

4 July 2005

Date of mailing of the international search report

11/07/2005

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6 162 022 A (ANDERSON ET AL) 19 December 2000 (2000-12-19) column 1, line 48 - column 2, line 13 -----	1

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JP 2000161204	A	13-06-2000	US DE	6176684 B1 19951499 A1	23-01-2001 31-05-2000	
EP 1319836	A	18-06-2003	US EP	2003110765 A1 1319836 A2	19-06-2003 18-06-2003	
US 5564905	A	15-10-1996	NONE			
US 6162022	A	19-12-2000	DE EP WO	69919658 D1 1000245 A1 9961796 A1	30-09-2004 17-05-2000 02-12-1999	